



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/795,976	03/10/2004	Michael Ladwig	3351-028A	2277
23429 7590 11/19/2008 LOWE HAUPTMAN HAM & BERNER, LLP 1700 DIAGONAL ROAD SUITE 300 ALEXANDRIA, VA 22314				
EXAMINER				
PERUNGAVOOR, SATHYANARAYA V				
ART UNIT		PAPER NUMBER		
2624				
MAIL DATE		DELIVERY MODE		
11/19/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/795,976

Applicant(s)

LADWIG ET AL.

Examiner

SATH V. PERUNGAVOOR

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicant(s) Response to Official Action

- [1] The response filed on October 28, 2008 has been entered and made of record.

Response to Arguments/Amendments

- [2] Presented arguments have been fully considered, but are rendered moot in view of the new ground(s) of rejection necessitated by the 1.132 affidavit filed on October 28, 2008.

Claim Objections

- [3] Claim 7 is objected to because of the following informalities: “inserting” should be “inverting”. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- [4] Claims 1-3 and 10-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kopec et al. (“Kopec”) [US 5,883,986].

Regarding claim 1, Kopec meets the claim limitations, as follows:

A method of automatically identifying a pattern on a page [fig. 5], comprising:
synthetically generating textual patterns (*i.e.* 50) as signal templates [fig. 5];

compensating (*i.e.* 300), if necessary, for visual differences between the synthetically generated textual patterns (*i.e.* 50) and images being compared against (*i.e.* 210) the synthetically generated images (*i.e.* 50) [fig. 5]; and comparing compensated images (*i.e.* 70) against images (*i.e.* 210) in a database (*i.e. memory element inherently present*) [fig. 5].

Regarding claim 2, Kopec meets the claim limitations, as follows:

The method of claim 1, comprising outputting a signal against (*i.e.* 300) a synthetically generated image (*i.e.* 50) [fig. 5].

Regarding claim 3, Kopec meets the claim limitations, as follows:

The method of claim 1, wherein said compensating step accommodates for visual differences between font typefaces and different font sizes [col. 26, ll. 41-45].

Regarding claim 10, Kopec meets the claim limitations, as follows:

The method of claim 1, comprising producing a similarity matrix (*i.e. recognition*) for search pattern locations identified in said comparing step [col. 26, ll. 20-23].

Regarding claim 11, Kopec meets the claim limitations, as follows:

The method of claim 1, wherein said compensating step can accommodate visual differences between different typefaces, different font sizes and distortions introduced in subsequent printing, handling and/or scanning of the page [col. 26, ll. 20-23].

Regarding claim 12, Kopec meets the claim limitations, as follows:

The method of claim 1, wherein said compensating step can accommodate visual differences occurring from producing a graphic image [col. 26, ll. 20-23].

Regarding claim 13, Kopec meets the claim limitations, as follows:

The method of claim 1, comprising creating a database of metadata (*i.e.* 260) to use in synthetically generating patterns [fig. 5].

Regarding claim 14, Kopec meets the claim limitations, as follows:

The method of claim 1, comprising creating a target to search for using a search word specified using numeric characters in the search word [col. 26, ll. 1-10].

Regarding claim 15, Kopec meets the claim limitations, as follows:

The method of claim 14, wherein compensations include small enlargements or reductions in search pattern size or visual distortions [col. 26, ll. 41-45].

Regarding claims 16-19, all claimed limitations are set forth and rejected as per discussion for claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the

Art Unit: 2624

subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[5] Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopec in view of Dennis et al. ("Dennis") [US 6,285,802 B1].

Regarding claims 4 and 5, Kopec meets the claim limitations as set forth in claim 1.

Kopec does not explicitly disclose the following claim limitations:

4. The method of claim 1, further comprising deleting a duplicate scanned first page.
5. The method of claim 1, further comprising identifying pages as duplicates and assessing the duplicates for quality and deleting lower quality page of the duplicates.

However, in the same field of endeavor Dennis discloses the deficient claim limitations, as follows:

Removing duplicate images [col. 1, ll. 12-16].

Examiner takes Official Notice on the limitation of detecting quality and deleting lower quality images.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Kopec with Dennis to remove duplicates of lower quality the motivation being to save storage while maintaining quality [col. 1, ll. 12-16].

Regarding claim 6, Kopec meets the claim limitations, as follows:

The method of claim 5, comprising performing a connected element analysis to identify speckle and blocks of solid color [col. 5, ll. 17-19].

[6] Claims 7-9 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopec in view of Li et al. ("Li") [US 6,470,092 B1].

Regarding claims 7-9, Kopec meets the claim limitations as set forth in claim 1.

Kopec does not explicitly disclose the following claim limitations:

7. The method of claim 1, wherein the said compensating step comprises reducing resolution, inserting and mirroring a page image in the database.
8. The method of claim 7, comprising moving the page image from the spatial domain to a frequency domain.
9. The method of claim 8, comprising reducing resolution, inverting and mirroring image.

However, in the same field of endeavor Li discloses the deficient claim limitations, as follows:

Reducing resolution (*i.e.* 43), inverting (*i.e.* 44) and mirroring (*i.e.* 42) image [fig. 2].

Examiner takes Official Notice on the limitation of transforming the image from the spatial domain to a frequency domain.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Kopec with Li to create varying the templates the motivation being to obtain better correlation [col. 5, ll. 64-67]. The motivation for frequency transform being invariance to translation.

Regarding claim 21, all claimed limitations are set forth and rejected as per discussion for claims 7-9.

[7] Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopec in view of Burke et al. ("Burke") [US 6,351,660 B1].

Regarding claim 20, Kopec meets the claim limitations as set forth in claim 1.

Kopec does not explicitly disclose the following claim limitations:

The method according to claim 1, wherein comparing compensated images against images in a database includes: performing a Fast Fourier Transform (FFT) on the compensated image, moving the compensated image from the spatial to frequency domain; performing an FFT on a search target image; multiplying the FFT of the image to be searched by the FFT of the search target image to produce a correlation plane; performing an inverse FFT of the correlation plane, converting the correlation plane from the frequency domain to a spatial specification to produce a similarity matrix for search pattern locations within the target image; and applying a threshold to the similarity matrix to extract location of matches above the threshold.

However, in the same field of endeavor Burke discloses the deficient claim limitations, as follows:

The method according to claim 1, wherein comparing compensated images against images in a database includes: performing a Fast Fourier Transform (FFT) on the compensated image (*i.e. source image*), moving the compensated image from the spatial to frequency domain [*col. 11, ll. 14-30*]; performing an FFT on a search target image (*i.e. filter image*) [*col. 11, ll. 14-30*]; multiplying (*i.e. comparing*) the FFT of the image to be searched by the FFT of the search target image to produce a correlation plane [*col. 11, ll. 14-30*]; performing an inverse FFT of the correlation plane,

converting the correlation plane from the frequency domain to a spatial specification to produce a similarity matrix (*i.e. correlation pattern*) for search pattern locations within the target image [*col. 11, ll. 14-30*]; and applying a threshold to the similarity matrix to extract location of matches above the threshold [*col. 9, ll. 1-10*].

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Kopec with Burke and use an optical correlator, the motivation being the speed in performing the correlation [*col. 11, 14-30*].

Allowable Subject Matter

[8] Combining the limitations of claims 1, 7 and 20 would distinguish the invention over the prior art applied.

Contact Information

[9] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Sath V. Perungavoor whose telephone number is (571) 272-7455. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Matthew C. Bella whose telephone number is (571) 272-7778, can be reached on Monday to Friday from 9:00am to 5:00pm. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 2624

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dated: November 19, 2008

/Sath V. Perungavoor/

Sath V. Perungavoor

Telephone: (571) 272-7455